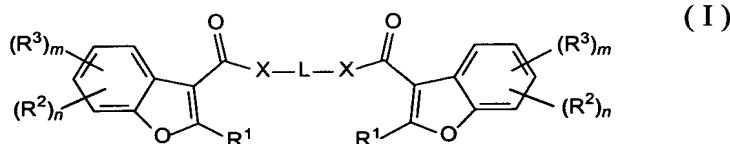


## CLAIMS

What is claimed is:

1. A compound of the formula I

5



wherein

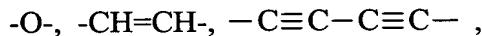
L is selected from  $-(CH_2)_a-$ , and a group of the formula



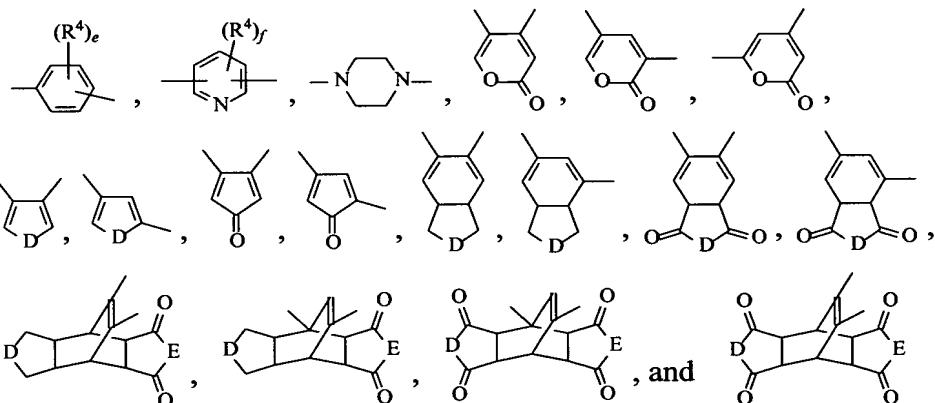
wherein  $a$  is selected from 2-20,

10 B is  $-(CH_2)_b-$ ,  $-(CH_2)_c-O-(CH_2)_d-$ , or  $-(CH_2)_c-\text{C}_6\text{H}_4-(CH_2)_d-$ , and

A is selected from a group of the formula



15



wherein  $R^4$  is selected from halogen, lower alkyl, lower alkoxy,  $\text{NO}_2$ , and  $-\text{NRR}$ ,

D and E are independently selected from O, S, Se, CRR and NR,

b is selected from 1-10,

20

c is selected from 1-8,

d is selected from 1-8,

e is selected from 0-4;

f is selected from 0-3, and

R is selected from H, lower alkyl, aralkyl and aryl;

X is selected from O, or -NH-;

R<sup>1</sup> is selected from

a C<sub>1</sub>-C<sub>20</sub> alkyl which may be unsubstituted or substituted with one or more substituents selected from CN, halogen, lower alkoxy, thio-lower alkyl, nitro, phosphinos, phosphates, and protected amino;

5 a C<sub>1</sub>-C<sub>20</sub> alkenyl which may be unsubstituted or substituted with one or more substituents selected from CN, halogen, lower alkoxy, thio-lower alkyl, nitro, phosphinos, phosphates, and protected amino;

an aromatic group which may be unsubstituted or substituted with one or more

10 substituents

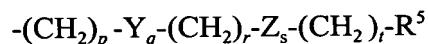
selected from halogen, lower alkyl, lower alkoxy, thio-lower alkyl, nitro, phosphinos, phosphates, and protected amino; and

an aralkyl which may be unsubstituted or substituted with one or more substituents selected

15 from halogen, lower alkyl, lower alkoxy, thio-lower alkyl, nitro, phosphinos, phosphates, and protected amino;

R<sup>2</sup> is selected from halogen, hydroxy, CN, nitro, lower alkyl, lower alkoxy, thio-lower alkyl, lower alkenyl, cycloalkyl, C<sub>2</sub>-C<sub>8</sub> acyl, lower alkyl ester, and lower alkyl amide;

20 R<sup>3</sup> is a group of the formula



wherein Y and Z are independently selected from O, S, -OCH<sub>2</sub>CH<sub>2</sub>O-,  $\text{—}\overset{\text{O}}{\underset{||}{\text{C}}}\text{—}$ ,  $\text{—}\overset{\text{O}}{\underset{||}{\text{C}}}\text{—}\text{O—}$ ,  
 $\begin{array}{c} \text{R} \\ | \\ \text{N}=\text{C} \end{array}$ ,  $\begin{array}{c} \text{R} \\ | \\ \text{N} \end{array}$ ,  $\begin{array}{c} \text{R} \\ | \\ \text{CH} \end{array}$ , and  $\begin{array}{c} \text{R} \\ | \\ \text{C} \\ | \\ \text{R} \end{array}$ ;

25 p, r and t are independently selected from values from 0 to 10;

q and s are independently selected from 0 and 1, provided that when t=0 then s=0, and when r=0 then q=0; and

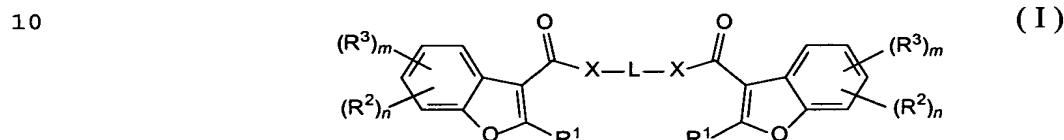
R<sup>5</sup> is selected from OH, CO<sub>2</sub>H,  $\text{—}\overset{\text{O}}{\underset{||}{\text{NHC}}}\text{OH}$ , and  $\text{—}\overset{\text{O}}{\underset{||}{\text{NHC}}}\text{—}\text{CH}_2\text{OH}$ ;

*n* is selected from 0-4; and

*m* is 0 or 1, with the proviso that the sum of *n* plus *m* does not exceed 4.

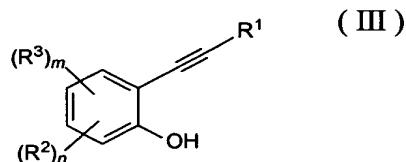
- 5 2. A compound of the claim 1, wherein A is selected from a group of the formula  
-O-, -CH=CH-, and -C≡C-C≡C- .

3. A process for the preparation of a compound of the formula I

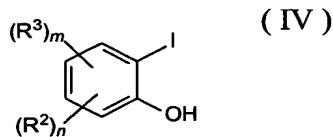


comprising the steps of

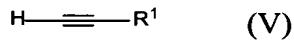
- (a) a Sonogashira reaction to prepare a compound of the formula III



- 15 by reacting a compound of the formula IV

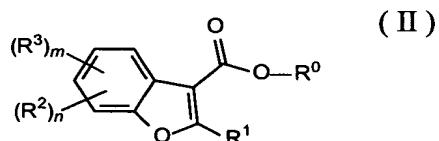


with a terminal alkyne represented by the formula V:



- 20 in the presence of base and a transition metal catalyst;

- (b) carbonylative annulation to give a compound of the formula II



by treating a compound of the formula III with an alcohol of the formula  $R^0\text{-OH}$  in the presence of a transition metal catalyst, carbon monoxide and a base, wherein  $R^0$  is lower alkyl, aralkyl, or aryl, wherein the lower alkyl, aralkyl, or aryl, may be optionally substituted with one or more halogen, CN and nitro, or  $R^0$  is selected from a group of the

5 formula

-L-OH, and -B-A',

wherein L and B are as described above for a compound of the formula I, and A' is -CH=CH<sub>2</sub> or -C≡CH ; and

- 10 (c) coupling two molecules of the formula II to give a compound of the formula I,  
wherein R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, X, L, n and m are as described in claim 1 for the compound of the formula I.